Title: COATS
Columbia Area Transportation Study
Smart Highways Report

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SC Department of Transportation
SC Department of Health & Environmental Control

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Executive Summary

This report demonstrates that the Columbia Area Transportation Study (COATS) Metropolitan Planning Organization (MPO) Long-Range Transportation Plan (LRTP) eliminates or reduces violations of the national ambient air quality standards (NAAQS) in the MPO portion of Richland County and Lexington County, South Carolina. The LRTP accomplishes the intent of the South Carolina Early Action Compact (EAC) State Implementation Plan (SIP). COATS MPO bases its regional emissions analysis on the transportation network approved by COATS for the 2025 Transportation Plan and the emission factors developed by the South Carolina Department of Health and Environmental Control (SCDHEC).

USEPA designated portions of Richland County and Lexington County South Carolina as a basic nonattainment area for ozone (O_3) under Subpart 1 of the Clean Air Act on April 15, 2004. The effective date of designation is deferred while South Carolina complies with the EAC.

The plan is fiscally constrained and identifies funding sources to the extent possible. SCDHEC prepared base and future emission rates for the vehicle fleet using Mobile 6.2. These rates were applied to VMT from the COATS travel demand model to estimate emissions.

Introduction

This report documents the regional emissions reduction test, interagency consultation process, public involvement process, and analysis methodology for the emissions analysis completed for the COATS MPO as part of the Early Action Compact implementation activities.

Regional Emissions Reduction Test

Table 1 shows the results of the baseline test and Table 2 shows the results of the build/no-build test. Both are represented in tons per day (tpd).

Table 1: Baseline Test Emissions

Year	NO_X (tpd)	VOC (tpd)
2000	47.876	29.478
2002	45.295	27.135
2007	32.017	18.962
2025	9.392	10.061

Table 2: Build/No Build Test

Precursor	NO_X (tpd)		VOC (tpd)	
Year	**No Build**	**Build**	**No Build**	**Build**
2025	9.48	9.392	10.304	10.061

The emissions in each functional classification are calculated using the formula:

$$Emissions_{FC} = DVMT_{FC} \times EmissionsFactor_{FC}$$

Where:

$Emissions_{FC}$ are the emissions in each functional classification,

$DVMT_{FC}$ is the Daily VMT in each functional classification, and

$EmissionsFactor_{FC}$ is the emissions factor for that functional classification. Emission Factors may be for either NO_X or VOC.

Daily emissions for each scenario are calculated by summing daily emissions across functional classes (in this case Interstates, Freeways, Principal Arterials, Minor Arterials, Collectors and Locals).

Appendix A contains the emission calculation spreadsheets showing the VMT and speed for each functional classification and each scenario.

Scope

The Travel Model covers portions of Richland County and Lexington County within the COATS MPO. All projects in the Long Range Transportation Plan within the modeled area are included in the Regional Model.

The Travel Demand Model

The South Carolina Department of Transportation provided transportation modeling support to COATS for the regional emissions analysis. The COATS travel demand model is a TRANPLAN-based travel demand model that includes the trip generation, trip distribution, and traffic assignment steps of the travel demand modeling process. The model uses the gravity model for trip distribution and the equilibrium trip assignment algorithm to assign traffic. The model does not include feedback loops from traffic assignment to either trip generation or trip distribution.

COATS/SCDOT last validated the model against ground counts in 2000. For the regional emissions analysis COATS and SCDOT developed socioeconomic data for 2002 and 2007 by interpolation. The base year 2000 data and horizon year 2025 forecast for each TAZ were used as the endpoints for a linear interpolation of each variable in each TAZ, and socioeconomic datasets were produced for 2002 and 2007. These datasets were then used in the trip generation step of the model.

Build and No-Build highway networks for the plan horizon year and for the 2002 and 2007 analysis years were also created. Table 3 shows the model calibration summary for the COATS model. A more complete discussion of the travel demand model is included in the COATS Long-Range Transportation Plan report.

Table 3: Model Calibration Statistics

Sub-Area	2000 Traffic Count	Assigned Volume	Ratio
North West	951,300	947,429	.996
North East	1,799,200	1,792,348	.996
South West	899,274	893,805	.994
South East	561,080	592,383	1.056
CBD	800,900	807,679	1.008
TOTAL	**5,011,754**	**5,033,644**	**1.004**

Figure 1 illustrates the calibration results of the COATS model by graphing the percent deviation of assigned traffic volumes to actual traffic counts for each of the 250 count stations used for model validation. As indicated by the graph, the percent deviation for nearly all count locations is below the curve of maximum desirable deviation as defined in the National Cooperative

Highway Research Program (NCHRP) 255 Report. The few counts that lie on or above the curve are on relatively low-volume roadways.

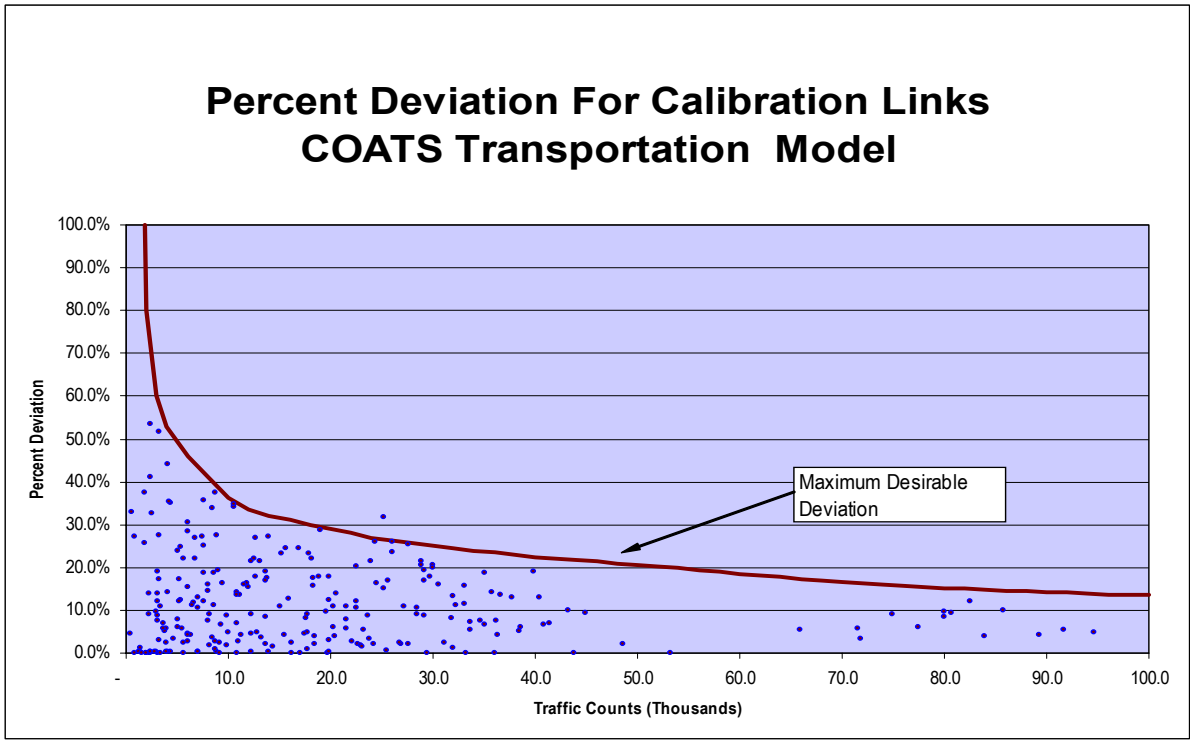


Figure 1: Percent Deviation for Calibration Links

The Emissions Model

The South Carolina Department of Health and Environmental Control (SCDHEC) performed emissions modeling using EPA's latest emissions model, MOBILE 6.2. SCDHEC developed MOBILE 6.2 input files using a mix of national default data and locally collected data. The 10 highest ozone readings at the Congaree Swamp, Parklane, and Sandhill monitors were used to develop minimum and maximum temperatures. The primary Mobile 6.2 local input parameters for this report include:

1. Minimum/maximum temperatures (66, 92).
2. Fuel Reid Vapor Pressure (9.0 psi).
3. No refueling.
   Emissions that occur during refueling are excluded from the emission estimates.
4. Average speed.
5. Vehicle Miles Traveled by Facility.

Appendix D includes the MOBILE 6.2 files.

Air Quality Planning

USEPA declared portions of Richland County and Lexington Counties, South Carolina basic nonattainment for ozone under Subpart 1 of the Clean Air Act on April 15, 2004. The effective date of designation is deferred while South Carolina complies with the EAC. Figure 2 at right shows the Richland County and Lexington County ozone nonattainment area.

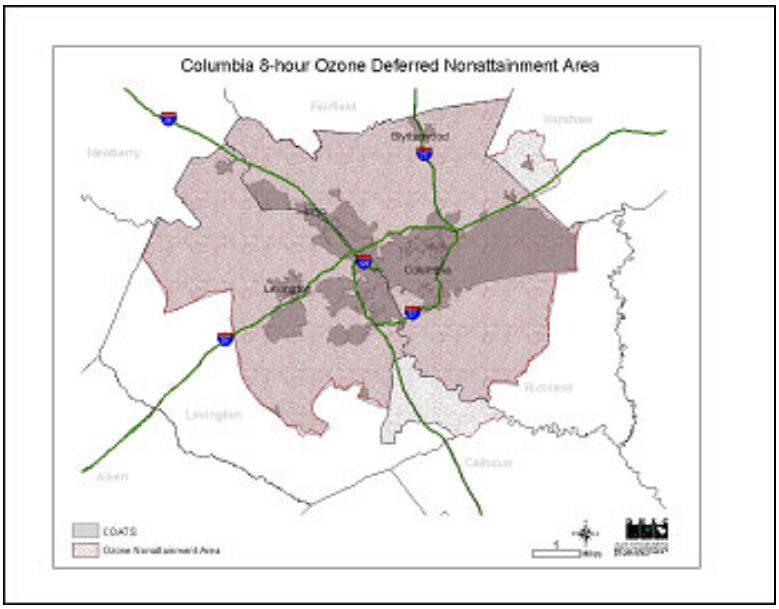


Figure 2: Ozone Nonattainment Area

Richland County and Lexington Counties joined SCDHEC in an EAC SIP to demonstrate a reduction of air pollutants without the prescriptive requirements of a nonattainment SIP. The EAC includes a plan for reducing ozone precursors to a level that demonstrates compliance with the NAAQS by December 31, 2007, and maintains the standard through 2017.

SCDHEC and SCDOT in consultation with EPA, FHWA, and FTA, in coordination with nonattainment area MPOs, developed the "Smart Highways" program to produce onroad mobile source emissions analyses, including this COATS emissions

Transportation Planning

The 2025 Long Range Transportation Plan for COATS is an update of the previous Long-Range Transportation Plan. The socioeconomic data and fiscal constraint elements of this LRTP include forecasts to the Design Year 2025.

Financial Constraint

The COATS fiscally constrained Long-Range Transportation Plan is based on historic and anticipated funding availability. Within the plan, COATS has identified funding sources, and associated them with projects to the extent possible. In addition, debt service associated with a large bond issue in the late 1990s has been included in estimating future funding streams. Between now and 2025 the expected funding stream is approximately $13.8 million per year. After accounting for debt service the total funding estimate is $161 million by 2025. The transportation improvements planned with this funding are described in Appendix B of this report and in the 2025 Long Range Transportation Plan.

Latest Planning Assumptions

COATS developed its 2025 Long-Range Transportation Plan with the latest planning assumptions. Population and employment were developed using a step down method to develop regional control totals and then distributing population and employment by classification to individual traffic analysis zones. COATS staff consulted with a wide range of stakeholders and state and local officials to assist in developing the control totals and the intensity of development in each traffic analysis zone. Latest planning assumptions were used for land use. Figure 3 summarizes the population and employment data for each horizon year of the travel demand model.

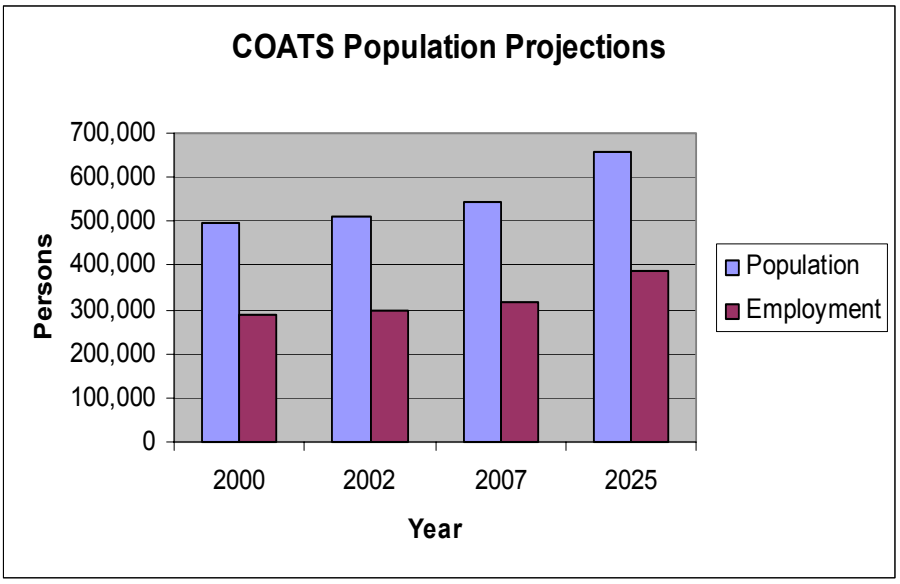


Figure 3: COATS Population and Employment

Interagency Consultation

The documentation in this report was the subject of interagency consultation. Interagency consultation began in January 2003 and continued through completion of the emissions analysis with regular meetings to discuss and agree upon schedules, model parameters, latest planning assumptions, horizon years, exempt projects, and regionally significant projects. Copies of notes from these meetings are included in Appendix C of this report.

Public Involvement

COATS conducted public review of this 2025 Long Range Transportation Plan report in accordance with the MPO's public involvement policy. A key element of the public involvement process is a public review of transportation planning documents including the Long-Range Transportation Plan.

Conclusion

Based on the analysis and consultation discussed above the emissions expected from implementing the proposed 2025 COATS Long-Range Transportation Plan are less than emissions from either the baseline case or the no build case.

Appendix A: Emission Calculation Spreadsheets

2002 BASE YEAR

Facility Type	VHT	Speed	DVMT	NOx EF g/mi	NOx (tpd)	VOC EF g/mi	VOC (tpd)
Freeway	112,156	57.82	6,484,945	3.302	23.597	1.426	10.191
Expressway	7,263	47.63	345,957	2.815	1.073	1.498	0.571
Ramps	3,568	24.83	88,592				
Princ Art Divided	21,713	38.53	836,529	2.388	2.201	1.574	1.451
Princ Art Undivided	52,218	38.26	1,997,974	2.386	5.253	1.578	3.474
Minor Art Divided	2,572	36.71	94,414	2.374	0.247	1.596	0.166
Minor Art Undivided	72,554	35.82	2,598,798	2.367	6.779	1.608	4.605
Collector	194	26.81	5,201	2.438	0.014	1.797	0.010
Local	64,950	34.87	2,264,603	2.456	6.129	2.671	6.666
Total	337,188	43.65	14,717,013		**45.294**		**27.134**

2007

Facility Type	VHT	Speed	DVMT	NOx EF g/mi	NOx (tpd))	VOC EF g/mi	VOC (tpd))
Freeway	128,505	55.98	7,193,864	2.040	16.172	0.901	7.143
Expressway	8,049	46.59	375,002	1.763	0.729	0.951	0.393
Ramps	4,245	22.74	96,551				
Princ Art Divided	23,479	38.15	895,642	1.560	1.540	1.003	0.990
Princ Art Undivided	56,710	38.03	2,156,954	1.560	3.708	1.004	2.386
Minor Art Divided	3,510	41.71	146,389	1.590	0.256	0.978	0.158
Minor Art Undivided	83,762	34.63	2,900,474	1.543	4.932	1.034	3.305
Collector	187	25.40	4,750	1.613	0.008	1.162	0.006
Local	73,367	34.11	2,502,561	1.694	4.672	1.661	4.581
Total	381,814	42.62	16,272,187		**32.017**		**18.962**

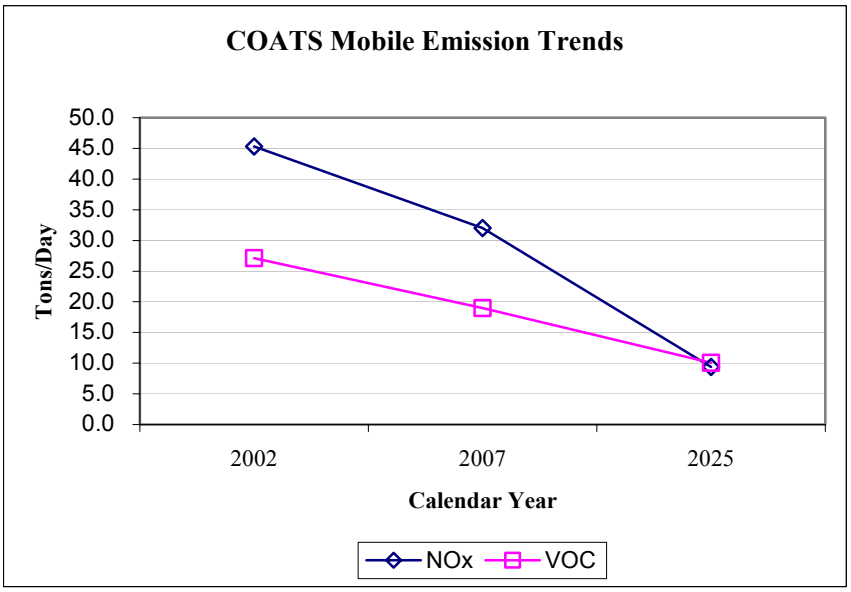
2025 (No Build)

Facility Type	VHT	Speed	DVMT	NOx EF g/mi	NOx (tpd)	VOC EF g/mi	VOC (tpd)
Freeway	214,162	45.07	9,652,189	0.393	4.180	0.353	3.755
Expressway	11,723	40.76	477,875	0.384	0.202	0.364	0.192
Ramps	7,163	16.81	120,403				
Princ Art Divided	34,467	33.28	1,147,072	0.372	0.470	0.386	0.488
Princ Art Undivided	93,269	31.74	2,960,227	0.374	1.220	0.394	1.285
Minor Art Divided	5,941	34.84	206,978	0.370	0.084	0.380	0.087
Minor Art Undivided	155,381	24.95	3,876,713	0.392	1.675	0.433	1.850
Collector	231	23.78	5,494	0.396	0.002	0.443	0.003
Local	147,404	25.33	3,733,375	0.400	1.646	0.643	2.645
Total	669,741	33.12	22,180,326		**9.480**		**10.304**

2025

Facility Type	VHT	Speed	DVMT	NOx EF g/mi	NOx (tpd)	VOC EF g/mi	VOC (tpd)
Freeway	208,741	45.87	9,575,709	0.395	4.168	0.351	3.704
Expressway	12,461	41.27	514,316	0.385	0.218	0.362	0.205
Ramps	7,158	16.85	120,621				
Princ Art Divided	33,989	33.56	1,140,790	0.372	0.468	0.385	0.484
Princ Art Undivided	89,605	32.62	29,22,800	0.373	1.201	0.389	1.253
Minor Art Divided	6,216	35.38	219,951	0.371	0.090	0.378	0.092
Minor Art Undivided	125,465	31.37	3,936,372	0.374	1.622	0.395	1.713
Collector	223	23.88	5,326	0.396	0.002	0.442	0.003
Local	136,226	27.01	3,679,338	0.400	1.622	0.643	2.607
Total	620,084	35.66	22,115,223		**9.392**		**10.061**

	Calendar Year			
	2002	**2007**	**2025**	**2025nb**
NO_x	45.3	32.0	9.4	9.5
VOC	27.1	19.0	10.1	10.3



APPENDIX B: COATS Long-Range Transportation Plan Project List

LONG-RANGE TRANSPORTATION PLAN; HIGHWAY ELEMENT					
Approved by the CMCOG Board August 28, 2003					
Project	**Highway Improvement Projects**	**Length**	**Existing**	**Proposed**	**Estimate**
Rank	**Name**	**(Miles)**	**Lanes**	**Lanes**	**Cost**
1	S-48 (US 76 to I-26)	2	2	5	$19,800,000
2	SC 6 (Two Notch Road to Nazareth Road)	1.7	2	5	$10,300,000
3	US 76 (From existing 5 lane segment to Hilton)	3.5	2	5	$17,000,000
4	Edmund Highway (Segment of US 302 combined with SC 6)	1.5	2	5	$10,100,000
5	Edmund Highway SC 6 to Princeton Rd.	2.5	2	5	$14,420,000
6	Platt Springs Rd. (SC 6 to Emmanuel Church Rd.)	5.2	2	5	$22,600,000
7	Fish Hatchery Rd. (Pineridge Drive to US 321)	2.2	2	5	$10,940,000
8	Old Cherokee Rd. (US 378 East to US 378 West)	5.2	2	3	$25,740,000
9	Hard Scrabble Rd. (Farrow Rd. @ I-77 to Clemson Rd.)	2	2	5	$19,400,000
10	SC 6 (Nazareth Road to Platt Springs Road)	1.7	2	5	$10,752,500
	Total				**$161,052,500**

APPENDIX C: Interagency Consultation Meeting Notes

January 27, 2003 – Initial meeting held between EPA, FHWA, DOT, and DHEC. DOT and FHWA are to work out involving the MPOs. Group feels it will be beneficial to implement some conformity type processes (lack of better word) – and formed a workgroup. The workgroup held a conference call – DOT is putting together some information concerning the technical process and will submit it for review.

February 10, 2003 – Workgroup has been getting input from the counties and the MPOs about the process.

March 3, 2003 – John Gardner with DOT has some ideas out for starting points. Group has reviewed and will discuss during the next conference call.

March 17, 2003 – Group decided that approach is a good idea. John Gardner and Dan Hinton are going to evaluate the conformity checklist for items that can be pulled for approach. John is also going to check for an inventory of what VMT information is available. Tonya, Melinda and Henry are drafting the process for the agencies to follow based on priority given to non-attainment areas to include a "what if" approach. Lynorae had some comments from EPA that she is going to provide in the next day or so. All of these deliverables are to be completed by March 21st. After everyone has reviewed, we will set up another conference call.

March 24, 2003 – Waiting on John Gardner and Dan Hinton to evaluate the conformity checklist for items that can be pulled for approach. Also waiting on John to check for an inventory of what VMT information is available. We (DHEC) have drafted and sent out to the rest of the group a process for the agencies to follow based on priority given to non-attainment areas to include a "what if" approach. After everyone has reviewed, we will set up another conference call to discuss.

April 7, 2003 – Discussed proposals and checklist developed by participants. Lynorae Benjamin (EPA) was unable to participate on call, which limited some of the discussion, but we have since caught up via individual phone messages. John Gardner (DOT) will be drafting a plan from the DOT perspective for the group to be delivered in two weeks.

April 14, 2003 – Awaiting a draft plan from John Gardner at DOT.

May 27, 2003 – The Southern Environmental Law Center is very interested in participating in this approach and has submitted a letter with their concerns. Several of the MPOs have also expressed an interest in being involved as well. Once John has completed draft, we will reconvene and will certainly welcome the additional stakeholders.

August 18, 2003 – John Gardner has provided transportation plans from several MPOs to potentially be used as a guide.

August 25, 2003 – John will send a smart highways checklist around to folks by next week. Lynorae will develop a "flowchart", to include "what ifs". She will send it out by September 5th. The group will review the documents and get back together on September 10th for another call.

September 1, 2003 – A conference call will be held on Wednesday, September 10th.

September 8, 2003 – The group is currently awaiting the review of the *GRATS long-range transportation document. We plan to possibly meet on October 8th for our next discussion. (*GRATS will be referred to later as GPATS due to changes in their organizational boundary)

January 30, 2004 – A meeting is scheduled for February 12th here in Columbia. We will discuss the conformity process and develop a Smart Highways approach.

February 27, 2004 – There was representation by DHEC, EPA, MPOs, FHWA, and DOT during the meeting held February 12th. There were several presentations at the meeting and we discussed the conformity process and the Smart Highways approach.

August 27, 2004 – FHWA sent out checklist to group and a conference call was held with DOT, FHWA, EPA, and MPOs on September 2nd to finalize checklist. Sent out new version of checklist today. Inter-agency partners will have upper management review. Plan is to share with Southern Environmental Law Center in the next couple of weeks for their comments. Additionally, DHEC has drafted language addressing the checklist to be placed in the EAC SIP.

September 30, 2004 – Awaiting comments from SELC.

October 29, 2004 – Finalized and out on public comment with the rest of EAC stuff.

January 31, 2005 – Meeting to discuss status and make preparations for EAC obligations.

February 25, 2005 – Awaiting submittal of VMT and speed data from the 4 MPOs. It is due March 16th.

March 31, 2005 – We have received VMT and speed data from GPATS, ANATS, and COATS. That data will be placed into Mobile 6 so that an emissions analysis can be completed. We are still awaiting SPATS.

April 29, 2005 – We have received VMT and speed data from all the MPOs and are completing Mobile 6 baseline analysis.

May 31, 2005 – The Smart Highways analyses were completed. Currently, the MPOs, DOT, and DHEC are writing up the associated reports.

June 30, 2005 – June 27th we sent reports rewrites to DOT. On July 7th we met with DOT and the MPOs to answer questions about the report. Our target completion date for the reports is August 1st.

July 29, 2005 – We are still finalizing the assessment documents for each area.

August 31, 2005 – Have made some changes to the Smart Highways Reports. Awaiting feedback from COATS.

September 29, 2005 – DHEC completed review of reports and redistributed them as final drafts.

Appendix D: MOBILE 6.2 Files

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**********************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                         *
* Input file: C:\MOBILE6\RUN\DATA\COATS00D.IN (file 1, run 1).       *
**********************************************************************
 M616 Comment:
          User has supplied post-1999 sulfur levels.
 M603 Comment:
          User has disabled the calculation of REFUELING emissions.

* # # # # # # # # # # # # # # # # # # # # # # #
* Freeway 58.6 MPH
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # #
 M582 Warning:
        The user supplied freeway average speed of 58.6
        will be used for all hours of the day. 100% of VMT
        has been assigned to a fixed combination of freeways
        and freeway ramps for all hours of the day and all
         vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b

              Calendar Year:  2000
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
          Fuel Sulfur Content:  300. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
          GVWR:            <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
```

VMT Distribution: 0.4841 0.2894 0.0996 0.0359 0.0011 0.0016 0.0820 0.0063 1.0000

Composite Emission Factors (g/mi):

Composite VOC : 1.527 1.692 2.630 1.932 1.758 0.638 0.787 0.516 3.01 1.617

Composite NOX : 1.345 1.528 1.849 1.610 6.073 2.543 2.453 26.873 1.52 3.716

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* ##########################
* Expressway 47.91 MPH
* File 1, Run 1, Scenario 2.
* ##########################

M582 Warning:
The user supplied freeway average speed of 47.9
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.

M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2000
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 300. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDDV LDDT HDDV MC All Veh

GVWR: <6000 >6000 (All)

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```
  VMT Distribution:    0.4841    0.2894    0.0996          0.0359    0.0011    0.0016    0.0820
0.0063    1.0000
 -------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.603     1.779     2.784     2.036     1.875    0.658     0.812     0.550
2.59     1.699
    Composite NOX :      1.309     1.472     1.793     1.554     5.606    1.747     1.684    20.660
1.21     3.146
 -------------------------------------------------------------------------------------------------------
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* # # # # # # # # # # # # # # # # # # # # # # # # #
* Principal Art Divided 38.75 MPH
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #
 M583 Warning:
        The user supplied arterial average speed of 38.8
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

              Calendar Year:  2000
                    Month:  July
                 Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:  300. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV       MC   All Veh
          GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
```

```
  VMT Distribution:    0.4841    0.2894    0.0996          0.0359    0.0011    0.0016    0.0820
0.0063    1.0000
 -------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.688     1.842     2.900     2.113     2.142    0.712     0.878     0.639
2.67     1.787
    Composite NOX :      1.268     1.406     1.730     1.489     5.229    1.524     1.468    14.719
1.13     2.599
 -------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # #
* PRINCIPAL ART UNDIVIDED 38.57 MPH
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # #
 M583 Warning:
        The user supplied arterial average speed of 38.6
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

              Calendar Year:  2000
                    Month:  July
                 Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:  300. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV       MC   All Veh
          GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
```

```
  VMT Distribution:    0.4841    0.2894    0.0996          0.0359    0.0011    0.0016    0.0820
0.0063    1.0000
 -------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.690     1.844     2.902     2.115     2.150    0.714     0.880     0.642
2.67     1.790
    Composite NOX :      1.268     1.405     1.729     1.488     5.223    1.523     1.467    14.709
1.13     2.598
 -------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # #
* MINOR ARTERIAL DIVIDED 36.18 MPH
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # #
 M583 Warning:
        The user supplied arterial average speed of 36.2
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

             Calendar Year:  2000
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
           Absolute Humidity:   75. grains/lb
            Nominal Fuel RVP:   9.0 psi
              Weathered RVP:   8.5 psi
          Fuel Sulfur Content:  300. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
          GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
```

```
  VMT Distribution:    0.4841    0.2894    0.0996          0.0359    0.0011    0.0016    0.0820
0.0063    1.0000
 -------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.722     1.868     2.941     2.143     2.253    0.735     0.906     0.677
2.71     1.823
    Composite NOX :      1.266     1.398     1.724     1.482     5.128    1.505     1.449    14.569
1.12     2.579
 -------------------------------------------------------------------------------------------------------------
---
* # # # # # # # # # # # # # # # # # # # # # # # # #
* MINOR ARTERIAL UNDIVIDED 36.32 MPH
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # #
 M583 Warning:
         The user supplied arterial average speed of 36.3
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b

              Calendar Year:  2000
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
            Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.5 psi
          Fuel Sulfur Content:  300. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
          GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4841    0.2894    0.0996          0.0359    0.0011    0.0016    0.0820
0.0063    1.0000
```

```
 ------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.720     1.867     2.939     2.141     2.246    0.733     0.904     0.674
2.71     1.821
    Composite NOX :      1.266     1.399     1.724     1.482     5.134    1.506     1.451    14.578
1.12     2.580
 ------------------------------------------------------------------------------------------------------------
---

* ##########################
* COLLECTOR 27.07 MPH
* File 1, Run 1, Scenario 7.
* ##########################
  M583 Warning:
         The user supplied arterial average speed of 27.1
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
  M 48 Warning:
          there are no sales for vehicle class HDGV8b

              Calendar Year:  2000
                    Month:  July
                 Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:  300. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:             <6000     >6000     (All)
                 ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4841    0.2894    0.0996              0.0359    0.0011    0.0016    0.0820
0.0063    1.0000
```

```
 ------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.924     2.048     3.228     2.350     2.851    0.848     1.046     0.865
2.94     2.040
    Composite NOX :      1.334     1.449     1.782     1.534     4.773    1.543     1.487    14.870
1.04     2.644
 ------------------------------------------------------------------------------------------------------------
---

* ##########################
* LOCAL 35.44 MPH
* File 1, Run 1, Scenario 8.
* ##########################

* Reading Hourly Roadway VMT distribution from the following external
* data file: C:\MOBILE6\RUN\FVMTLOCL.D

  Reading User Supplied ROADWAY VMT Factors
  M585 Warning:
          100% of VMT has been assigned to the local roadway
          type for all hours of the day for all vehicle types
          with an average speed of 12.9 mph.
  M 48 Warning:
           there are no sales for vehicle class HDGV8b

                Calendar Year:  2000
                      Month:  July
                   Altitude:  Low
             Minimum Temperature:  67.2 (F)
             Maximum Temperature:  95.2 (F)
              Absolute Humidity:   75. grains/lb
               Nominal Fuel RVP:   9.0 psi
                  Weathered RVP:   8.5 psi
             Fuel Sulfur Content:  300. ppm

             Exhaust I/M Program:  No
               Evap I/M Program:  No
                  ATP Program:  No
               Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:             <6000     >6000     (All)
```

```
                  ------  ------  ------  ------  ------  ------  ------  ------  ------  ------
   VMT Distribution:    0.4841    0.2894    0.0996          0.0359    0.0011    0.0016    0.0820
0.0063    1.0000
  ------------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      2.933     2.926     4.447     3.315     5.588     1.214     1.496     1.472
3.81     3.059
    Composite NOX :      1.299     1.358     1.695     1.444     4.205     2.005     1.933    15.201
0.89     2.600
  ------------------------------------------------------------------------------------------------------------------------
---

MOBILE6 INPUT FILE :
*234567890123456789:
REPORT FILE       : C:\MOBILE6\RUN\DATA\coats02d.txt
POLLUTANTS        : NOX HC

RUN DATA

MIN/MAX TEMP      : 67.2 95.2
FUEL RVP          : 9.0
FUEL PROGRAM      : 1
NO REFUELING      :

SCENARIO REC      : Freeway 57.82 MPH
CALENDAR YEAR     : 2002
EVALUATION MONTH  : 7
AVERAGE SPEED     : 57.82 FREEWAY

SCENARIO REC      : Expressway 47.63 MPH
CALENDAR YEAR     : 2002
EVALUATION MONTH  : 7
AVERAGE SPEED     : 47.63 FREEWAY

SCENARIO REC      : Principal Art Divided 38.53 MPH
CALENDAR YEAR     : 2002
EVALUATION MONTH  : 7
AVERAGE SPEED     : 38.53 ARTERIAL

SCENARIO REC      : PRINCIPAL ART UNDIVIDED 38.26 MPH
CALENDAR YEAR     : 2002
EVALUATION MONTH  : 7
AVERAGE SPEED     : 38.26 ARTERIAL
```

SCENARIO REC : MINOR ARTERIAL DIVIDED 36.71 MPH
CALENDAR YEAR : 2002
EVALUATION MONTH : 7
AVERAGE SPEED : 36.71 ARTERIAL

SCENARIO REC : MINOR ARTERIAL UNDIVIDED 35.82 MPH
CALENDAR YEAR : 2002
EVALUATION MONTH : 7
AVERAGE SPEED : 35.82 ARTERIAL

SCENARIO REC : COLLECTOR 26.81 MPH
CALENDAR YEAR : 2002
EVALUATION MONTH : 7
AVERAGE SPEED : 26.81 ARTERIAL

SCENARIO REC : LOCAL 34.87 MPH
CALENDAR YEAR : 2002
EVALUATION MONTH : 7
VMT BY FACILITY : C:\MOBILE6\RUN\fvmtlocl.d
AVERAGE SPEED : 34.87 LOCAL

END OF RUN

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: C:\MOBILE6\RUN\DATA\COATS02D.IN (file 1, run 1). *
****
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

* ##########
* Freeway 57.82 MPH
* File 1, Run 1, Scenario 1.
* ##########
M582 Warning:
The user supplied freeway average speed of 57.8
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.

M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2002
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 279. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.4568	0.3091	0.1063		0.0360	0.0008	0.0017	0.0833	0.0060	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	1.345	1.461	2.337	1.685	1.494	0.582	0.779	0.455	2.95	1.426
Composite NOX :	1.255	1.484	1.828	1.572	5.767	2.203	2.275	22.244	1.50	3.302

---

* ##########################
* Expressway 47.63 MPH
* File 1, Run 1, Scenario 2.
* ##########################
M582 Warning:
The user supplied freeway average speed of 47.6
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:

there are no sales for vehicle class HDGV8b

Calendar Year: 2002
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 279. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4568	0.3091	0.1063		0.0360	0.0008	0.0017	0.0833	0.0060	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	1.412	1.538	2.467	1.776	1.599	0.601	0.805	0.487	2.59	1.498
Composite NOX :	1.219	1.431	1.775	1.519	5.344	1.564	1.614	17.093	1.21	2.815

* ##########################
* Principal Art Divided 38.53 MPH
* File 1, Run 1, Scenario 3.
* ##########################
M583 Warning:
The user supplied arterial average speed of 38.5
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

```
                Calendar Year:  2002
                      Month:  July
                   Altitude:  Low
               Minimum Temperature:  67.2 (F)
               Maximum Temperature:  95.2 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.5 psi
               Fuel Sulfur Content:  279. ppm

               Exhaust I/M Program:  No
                 Evap I/M Program:  No
                    ATP Program:  No
                 Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:             <6000     >6000     (All)
                  ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4568    0.3091    0.1063            0.0360    0.0008    0.0017    0.0833
0.0060    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.484     1.594     2.565     1.843     1.821     0.649     0.869     0.566
2.67     1.574
    Composite NOX :      1.174     1.365     1.710     1.453     4.988     1.370     1.413    12.707
1.13     2.388
 ------------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # #
* PRINCIPAL ART UNDIVIDED 38.26 MPH
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # #
 M583 Warning:
         The user supplied arterial average speed of 38.3
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
```

Calendar Year: 2002
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 279. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.4568	0.3091	0.1063		0.0360	0.0008	0.0017	0.0833	0.0060	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	1.487	1.597	2.569	1.846	1.830	0.651	0.872	0.570	2.67	1.578
Composite NOX :	1.174	1.364	1.710	1.452	4.978	1.368	1.412	12.693	1.13	2.386

---

* ##########################
* MINOR ARTERIAL DIVIDED 36.71 MPH
* File 1, Run 1, Scenario 5.
* ##########################
M583 Warning:
The user supplied arterial average speed of 36.7
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2002

```
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
          Fuel Sulfur Content:  279. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:            <6000     >6000     (All)
                  ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4568    0.3091    0.1063            0.0360    0.0008    0.0017    0.0833
0.0060    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.505     1.611     2.591     1.862     1.885     0.663     0.888     0.589
2.70     1.596
    Composite NOX :      1.172     1.359     1.706     1.448     4.920     1.358     1.401    12.609
1.12     2.374
 ------------------------------------------------------------------------------------------------------------------
---

* ##########################
* MINOR ARTERIAL UNDIVIDED 35.82 MPH
* File 1, Run 1, Scenario 6.
* ##########################
  M583 Warning:
          The user supplied arterial average speed of 35.8
          will be used for all hours of the day.  100% of VMT
          has been assigned to the arterial/collector roadway
          type for all hours of the day and all vehicle types.
  M 48 Warning:
           there are no sales for vehicle class HDGV8b

                Calendar Year:  2002
                     Month:  July
```

```
                Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
          Fuel Sulfur Content:  279. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:             <6000     >6000     (All)
                 ------    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4568    0.3091    0.1063            0.0360    0.0008    0.0017    0.0833
0.0060    1.0000
 ------------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.516     1.619     2.605     1.872     1.918    0.671     0.897     0.601
2.72     1.608
    Composite NOX :      1.170     1.357     1.704     1.446     4.884    1.351     1.394    12.558
1.11     2.367
 ------------------------------------------------------------------------------------------------------------------------
---
* # # # # # # # # # # # # # # # # # # # # # # # #
* COLLECTOR 26.81 MPH
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # #
 M583 Warning:
         The user supplied arterial average speed of 26.8
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b

              Calendar Year:  2002
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
```

```
            Maximum Temperature:  95.2 (F)
              Absolute Humidity:   75. grains/lb
               Nominal Fuel RVP:   9.0 psi
                  Weathered RVP:   8.5 psi
            Fuel Sulfur Content:  279. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                   ATP Program:  No
              Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:            <6000     >6000     (All)
                  ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4568    0.3091    0.1063            0.0360    0.0008    0.0017    0.0833
0.0060    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      1.692     1.777     2.857     2.053     2.413    0.773     1.033     0.769
2.95     1.797
    Composite NOX :      1.242     1.411     1.767     1.502     4.549    1.392     1.436    12.883
1.03     2.438
 ------------------------------------------------------------------------------------------------------------------
---

* ##########################
* LOCAL 34.87 MPH
* File 1, Run 1, Scenario 8.
* ##########################

* Reading Hourly Roadway VMT distribution from the following external
* data file: C:\MOBILE6\RUN\FVMTLOCL.D

  Reading User Supplied ROADWAY VMT Factors
  M585 Warning:
          100% of VMT has been assigned to the local roadway
          type for all hours of the day for all vehicle types
          with an average speed of 12.9 mph.
  M 48 Warning:
           there are no sales for vehicle class HDGV8b

               Calendar Year:  2002
```

```
                Month:  July
             Altitude:  Low
      Minimum Temperature:  67.2 (F)
      Maximum Temperature:  95.2 (F)
        Absolute Humidity:   75. grains/lb
         Nominal Fuel RVP:   9.0 psi
            Weathered RVP:   8.5 psi
      Fuel Sulfur Content:  279. ppm

      Exhaust I/M Program:  No
        Evap I/M Program:  No
           ATP Program:  No
        Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
          GVWR:            <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4568    0.3091    0.1063            0.0360    0.0008    0.0017    0.0833
0.0060    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      2.561     2.530     3.930     2.888     4.630     1.095     1.461     1.298
3.81     2.671
    Composite NOX :      1.204     1.323     1.677     1.414     4.016     1.803     1.862    13.972
0.89     2.456
 ------------------------------------------------------------------------------------------------------------------
---

**********************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                         *
* Input file: C:\MOBILE6\RUN\DATA\COATS07D.IN (file 1, run 1).       *
**********************************************************************
  M616 Comment:
          User has supplied post-1999 sulfur levels.
  M603 Comment:
          User has disabled the calculation of REFUELING emissions.


* ##########################
* Freeway 55.98 MPH
* File 1, Run 1, Scenario 1.
* ##########################
```

M582 Warning:
The user supplied freeway average speed of 56.0
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2007
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 33. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3872	0.3600	0.1237		0.0359	0.0004	0.0019	0.0854	0.0056	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.848	0.884	1.433	1.024	0.920	0.283	0.496	0.314	2.82	0.901
Composite NOX :	0.767	0.973	1.350	1.069	3.809	1.061	1.359	12.633	1.44	2.040

* #
* Expressway 46.59 MPH
* File 1, Run 1, Scenario 2.
* #

M582 Warning:
The user supplied freeway average speed of 46.6
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2007
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 33. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3872	0.3600	0.1237		0.0359	0.0004	0.0019	0.0854	0.0056	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.900	0.930	1.517	1.080	0.993	0.294	0.517	0.340	2.59	0.951
Composite NOX :	0.746	0.940	1.314	1.036	3.552	0.802	1.026	9.797	1.20	1.763

* #
* Principal Art Divided 38.15 MPH
* File 1, Run 1, Scenario 3.
* #

```
 M583 Warning:
        The user supplied arterial average speed of 38.2
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

              Calendar Year:  2007
                    Month:  July
                 Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:   33. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
          GVWR:             <6000     >6000     (All)
                 ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3872    0.3600    0.1237            0.0359    0.0004    0.0019    0.0854
0.0056    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.954     0.968     1.584     1.126     1.115    0.318     0.561     0.393
2.66     1.003
    Composite NOX :      0.722     0.902     1.270     0.996     3.330    0.715     0.914     7.864
1.13     1.560
 ------------------------------------------------------------------------------------------------------------------
---
* ##########################
* PRINCIPAL ART UNDIVIDED 38.03 MPH
* File 1, Run 1, Scenario 4.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 38.0
```

will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2007
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 33. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3872	0.3600	0.1237		0.0359	0.0004	0.0019	0.0854	0.0056	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.955	0.969	1.585	1.126	1.117	0.319	0.562	0.394	2.67	1.004
Composite NOX :	0.722	0.901	1.270	0.996	3.327	0.714	0.913	7.859	1.13	1.560

---

* ##########################
* MINOR ARTERIAL DIVIDED 41.71 MPH
* File 1, Run 1, Scenario 5.
* ##########################
M583 Warning:
The user supplied arterial average speed of 41.7
will be used for all hours of the day. 100% of VMT

has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2007
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 33. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3872	0.3600	0.1237		0.0359	0.0004	0.0019	0.0854	0.0056	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.927	0.949	1.552	1.103	1.055	0.306	0.539	0.366	2.62	0.978
Composite NOX :	0.726	0.911	1.279	1.005	3.420	0.737	0.942	8.104	1.15	1.590

* ##########################
* MINOR ARTERIAL UNDIVIDED 34.63 MPH
* File 1, Run 1, Scenario 6.
* ##########################
M583 Warning:
The user supplied arterial average speed of 34.6
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway

type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2007
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 33. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.3872	0.3600	0.1237		0.0359	0.0004	0.0019	0.0854	0.0056	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.985	0.990	1.622	1.152	1.187	0.333	0.588	0.426	2.73	1.034
Composite NOX :	0.720	0.896	1.265	0.990	3.239	0.703	0.899	7.740	1.11	1.543

* #
* COLLECTOR 25.40 MPH
* File 1, Run 1, Scenario 7.
* #
M583 Warning:
The user supplied arterial average speed of 25.4
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2007
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 33. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.3872	0.3600	0.1237	0.0359	0.0004	0.0019	0.0854	0.0056	1.0000	

Composite Emission Factors (g/mi):

Composite VOC :	1.108	1.091	1.793	1.271	1.490	0.391	0.693	0.554	2.99	1.162
Composite NOX :	0.776	0.945	1.329	1.043	3.006	0.737	0.942	8.107	1.02	1.613

* ##########################
* LOCAL 34.11 MPH
* File 1, Run 1, Scenario 8.
* ##########################

* Reading Hourly Roadway VMT distribution from the following external
* data file: C:\MOBILE6\RUN\FVMTLOCL.D

Reading User Supplied ROADWAY VMT Factors
M585 Warning:

100% of VMT has been assigned to the local roadway
type for all hours of the day for all vehicle types
with an average speed of 12.9 mph.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2007
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 33. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.3872	0.3600	0.1237	0.0359	0.0004	0.0019	0.0854	0.0056	1.0000	

Composite Emission Factors (g/mi):

Composite VOC :	1.619	1.498	2.432	1.736	2.640	0.543	0.972	0.893	3.80	1.661
Composite NOX :	0.751	0.895	1.266	0.990	2.689	0.943	1.207	9.607	0.89	1.694

MOBILE6 INPUT FILE :
*234567890123456789:
REPORT FILE : C:\MOBILE6\RUN\DATA\coats25D.txt
POLLUTANTS : NOX HC

RUN DATA

MIN/MAX TEMP : 67.2 95.2
FUEL RVP : 9.0
FUEL PROGRAM : 1
NO REFUELING :
SCENARIO REC : Freeway 45.87 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 45.87 FREEWAY

SCENARIO REC : Expressway 41.27 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 41.27 FREEWAY

SCENARIO REC : Principal Art Divided 33.56 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 33.56 ARTERIAL

SCENARIO REC : PRINCIPAL ART UNDIVIDED 32.62 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 32.62 ARTERIAL

SCENARIO REC : MINOR ARTERIAL DIVIDED 35.38 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 35.38 ARTERIAL

SCENARIO REC : MINOR ARTERIAL UNDIVIDED 31.37 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 31.37 ARTERIAL

SCENARIO REC : COLLECTOR 23.88 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 23.88 ARTERIAL

SCENARIO REC : LOCAL 27.01 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
VMT BY FACILITY : C:\MOBILE6\RUN\fvmtlocl.d
AVERAGE SPEED : 27.01 LOCAL

END OF RUN

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\MOBILE6\RUN\DATA\COATS25D.IN (file 1, run 1).          *
*************************************************************************
 M616 Comment:
          User has supplied post-1999 sulfur levels.
 M603 Comment:
          User has disabled the calculation of REFUELING emissions.


* # # # # # # # # # # # # # # # # # # # # # # # #
* Freeway 45.87 MPH
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # #
 M582 Warning:
        The user supplied freeway average speed of 45.9
        will be used for all hours of the day. 100% of VMT
        has been assigned to a fixed combination of freeways
        and freeway ramps for all hours of the day and all
         vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12

              Calendar Year:  2025
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No
```

```
      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
            GVWR:             <6000     >6000     (All)
                   ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
  ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.292     0.347     0.528     0.393     0.235    0.040     0.127     0.180
2.57     0.351
    Composite NOX :      0.233     0.335     0.562     0.393     0.361    0.029     0.170     0.900
1.19     0.395
  ------------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Expressway 41.27 MPH
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
          The user supplied freeway average speed of 41.3
          will be used for all hours of the day. 100% of VMT
          has been assigned to a fixed combination of freeways
          and freeway ramps for all hours of the day and all
           vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12

                 Calendar Year:  2025
                       Month:  July
                    Altitude:  Low
               Minimum Temperature:  67.2 (F)
               Maximum Temperature:  95.2 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.5 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                      ATP Program:  No
```

```
             Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV       MC   All Veh
            GVWR:            <6000     >6000     (All)
                  ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.306     0.355     0.541     0.403     0.254    0.042     0.132     0.193
2.61     0.362
    Composite NOX :      0.231     0.329     0.555     0.387     0.348    0.027     0.158     0.837
1.14     0.385
 ------------------------------------------------------------------------------------------------------------------
---

* ##########################
* Principal Art Divided 33.56 MPH
* File 1, Run 1, Scenario 3.
* ##########################
  M583 Warning:
          The user supplied arterial average speed of 33.6
          will be used for all hours of the day.  100% of VMT
          has been assigned to the arterial/collector roadway
          type for all hours of the day and all vehicle types.
  M 48 Warning:
           there are no sales for vehicle class HDGV8b
  M 48 Warning:
           there are no sales for vehicle class LDDT12

               Calendar Year:  2025
                     Month:  July
                  Altitude:  Low
            Minimum Temperature:  67.2 (F)
            Maximum Temperature:  95.2 (F)
              Absolute Humidity:   75. grains/lb
               Nominal Fuel RVP:   9.0 psi
                  Weathered RVP:   8.5 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
              Evap I/M Program:  No
```

```
                ATP Program:  No
              Reformulated Gas:  No

     Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT
HDDV       MC   All Veh
           GVWR:           <6000    >6000    (All)
                ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
  VMT Distribution:   0.2788   0.4388   0.1507           0.0365   0.0003   0.0022   0.0876
0.0051   1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
   Composite VOC :     0.331    0.370    0.564    0.420    0.297   0.047    0.146    0.229
2.74    0.385
   Composite NOX :     0.229    0.321    0.542    0.377    0.328   0.026    0.151    0.770
1.10    0.372
 ------------------------------------------------------------------------------------------------------------------
---

* ##########################
* PRINCIPAL ART UNDIVIDED 32.62 MPH
* File 1, Run 1, Scenario 4.
* ##########################
  M583 Warning:
         The user supplied arterial average speed of 32.6
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
  M 48 Warning:
          there are no sales for vehicle class HDGV8b
  M 48 Warning:
          there are no sales for vehicle class LDDT12

               Calendar Year:  2025
                     Month:  July
                  Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
```

```
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.335     0.374     0.569     0.424     0.304     0.048     0.149     0.235
2.76     0.389
    Composite NOX :      0.230     0.322     0.544     0.378     0.326     0.026     0.151     0.771
1.09     0.373
 ------------------------------------------------------------------------------------------------------------------
---

* ##########################
* MINOR ARTERIAL DIVIDED 35.38 MPH
* File 1, Run 1, Scenario 5.
* ##########################
  M583 Warning:
         The user supplied arterial average speed of 35.4
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
  M 48 Warning:
          there are no sales for vehicle class HDGV8b
  M 48 Warning:
          there are no sales for vehicle class LDDT12

               Calendar Year:  2025
                     Month:  July
                  Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:   30. ppm
```

```
          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV       MC   All Veh
          GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.323     0.365     0.555     0.413     0.286    0.046     0.142     0.219
2.70     0.378
    Composite NOX :      0.227     0.319     0.540     0.376     0.332    0.026     0.151     0.770
1.11     0.371
 ---------------------------------------------------------------------------------------------------------------
---

* ##########################
* MINOR ARTERIAL UNDIVIDED 31.37 MPH
* File 1, Run 1, Scenario 6.
* ##########################
  M583 Warning:
         The user supplied arterial average speed of 31.4
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
  M 48 Warning:
           there are no sales for vehicle class HDGV8b
  M 48 Warning:
         there are no sales for vehicle class LDDT12

              Calendar Year:  2025
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
          Fuel Sulfur Content:   30. ppm
```

```
          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:     LDGV    LDGT12    LDGT34     LDGT     HDGV     LDDV     LDDT
HDDV       MC   All Veh
          GVWR:           <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507           0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
   Composite VOC :      0.341     0.379     0.576     0.429     0.313     0.049     0.152     0.243
2.79     0.395
   Composite NOX :      0.232     0.323     0.546     0.380     0.322     0.026     0.152     0.773
1.08     0.374
 ------------------------------------------------------------------------------------------------------------------
---

* ##########################
* COLLECTOR 23.88 MPH
* File 1, Run 1, Scenario 7.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 23.9
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12

              Calendar Year:  2025
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
           Absolute Humidity:   75. grains/lb
            Nominal Fuel RVP:   9.0 psi
              Weathered RVP:   8.5 psi
```

```
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
          GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.385     0.416     0.631     0.471     0.387    0.057     0.176     0.305
3.03     0.442
    Composite NOX :      0.252     0.342     0.576     0.402     0.303    0.028     0.161     0.823
1.00     0.396
 ------------------------------------------------------------------------------------------------------------------
---

* ##########################
* LOCAL 27.01 MPH
* File 1, Run 1, Scenario 8.
* ##########################

* Reading Hourly Roadway VMT distribution from the following external
* data file: C:\MOBILE6\RUN\FVMTLOCL.D

 Reading User Supplied ROADWAY VMT Factors
 M585 Warning:
         100% of VMT has been assigned to the local roadway
         type for all hours of the day for all vehicle types
         with an average speed of 12.9 mph.
 M 48 Warning:
           there are no sales for vehicle class HDGV8b
 M 48 Warning:
           there are no sales for vehicle class LDDT12

               Calendar Year:  2025
                     Month:  July
                  Altitude:  Low
```

```
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
          GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.599     0.591     0.863     0.661     0.701    0.080     0.241     0.467
3.79     0.643
    Composite NOX :      0.253     0.327     0.539     0.381     0.274    0.035     0.202     1.021
0.89     0.400
 ------------------------------------------------------------------------------------------------------------------
---

MOBILE6 INPUT FILE :
*234567890123456789:
REPORT FILE       : C:\MOBILE6\RUN\DATA\coatsnbD.txt
POLLUTANTS        : NOX HC

RUN DATA

MIN/MAX TEMP      : 67.2 95.2
FUEL RVP          : 9.0
FUEL PROGRAM      : 1
NO REFUELING      :

SCENARIO REC      : Freeway 45.07 MPH
CALENDAR YEAR     : 2025
EVALUATION MONTH  : 7
AVERAGE SPEED     : 45.07 FREEWAY
```

SCENARIO REC : Expressway 40.76 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 40.76 FREEWAY

SCENARIO REC : Principal Art Divided 33.28 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 33.28 ARTERIAL

SCENARIO REC : PRINCIPAL ART UNDIVIDED 31.74 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 31.74 ARTERIAL

SCENARIO REC : MINOR ARTERIAL DIVIDED 34.84 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 34.84 ARTERIAL

SCENARIO REC : MINOR ARTERIAL UNDIVIDED 24.95 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 24.95 ARTERIAL

SCENARIO REC : COLLECTOR 23.78 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
AVERAGE SPEED : 23.78 ARTERIAL

SCENARIO REC : LOCAL 25.33 MPH
CALENDAR YEAR : 2025
EVALUATION MONTH : 7
VMT BY FACILITY : C:\MOBILE6\RUN\fvmtlocl.d
AVERAGE SPEED : 25.33 LOCAL

END OF RUN

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: C:\MOBILE6\RUN\DATA\COATSNBD.IN (file 1, run 1). *
****
M616 Comment:

User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

* ##########################
* Freeway 45.07 MPH
* File 1, Run 1, Scenario 1.
* ##########################
M582 Warning:
The user supplied freeway average speed of 45.1
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2025
Month: July
Altitude: Low
Minimum Temperature: 67.2 (F)
Maximum Temperature: 95.2 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.5 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000

Composite Emission Factors (g/mi):

```
    Composite VOC :      0.294     0.349     0.530     0.395     0.238     0.040     0.128     0.182
2.58     0.353
    Composite NOX :      0.233     0.334     0.561     0.392     0.358     0.029     0.167     0.885
1.17     0.393
 ------------------------------------------------------------------------------------------------------------------
---

* ##########################
* Expressway 40.76 MPH
* File 1, Run 1, Scenario 2.
* ##########################
  M582 Warning:
         The user supplied freeway average speed of 40.8
         will be used for all hours of the day. 100% of VMT
         has been assigned to a fixed combination of freeways
         and freeway ramps for all hours of the day and all
          vehicle types.
  M 48 Warning:
          there are no sales for vehicle class HDGV8b
  M 48 Warning:
          there are no sales for vehicle class LDDT12

              Calendar Year:  2025
                    Month:  July
                 Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:             <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
```

```
 ------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.307     0.356     0.542     0.404     0.256    0.042     0.133     0.195
2.61     0.364
    Composite NOX :      0.231     0.328     0.554     0.386     0.347    0.027     0.157     0.832
1.14     0.384
 ------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Principal Art Divided 33.28 MPH
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
          The user supplied arterial average speed of 33.3
          will be used for all hours of the day.  100% of VMT
          has been assigned to the arterial/collector roadway
          type for all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12

                 Calendar Year:  2025
                       Month:  July
                    Altitude:  Low
              Minimum Temperature:  67.2 (F)
              Maximum Temperature:  95.2 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                Evap I/M Program:  No
                    ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
             GVWR:             <6000     >6000     (All)
                   ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
```

```
  VMT Distribution:    0.2788    0.4388    0.1507          0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 -------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.332     0.371     0.565     0.421     0.299    0.047     0.147     0.231
2.75     0.386
    Composite NOX :      0.229     0.321     0.543     0.378     0.327    0.026     0.151     0.770
1.10     0.372
 -------------------------------------------------------------------------------------------------------------
---

* ##########################
* PRINCIPAL ART UNDIVIDED 31.74 MPH
* File 1, Run 1, Scenario 4.
* ##########################
  M583 Warning:
         The user supplied arterial average speed of 31.7
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
  M 48 Warning:
          there are no sales for vehicle class HDGV8b
  M 48 Warning:
          there are no sales for vehicle class LDDT12

              Calendar Year:  2025
                    Month:  July
                 Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
           GVWR:             <6000     >6000     (All)
```

```
                ------  ------  ------  ------  ------  ------  ------  ------  ------  ------
  VMT Distribution:    0.2788    0.4388    0.1507          0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.339     0.377     0.574     0.427     0.311    0.048     0.151     0.240
2.78     0.394
    Composite NOX :      0.232     0.323     0.546     0.380     0.323    0.026     0.151     0.773
1.08     0.374
 ------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # # #
* MINOR ARTERIAL DIVIDED 34.84 MPH
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # #
 M583 Warning:
         The user supplied arterial average speed of 34.8
         will be used for all hours of the day.  100% of VMT
         has been assigned to the arterial/collector roadway
         type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12

              Calendar Year:  2025
                    Month:  July
                 Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
                Weathered RVP:   8.5 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
```

```
            GVWR:            <6000    >6000    (All)
                  ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
  VMT Distribution:   0.2788   0.4388   0.1507          0.0365   0.0003   0.0022   0.0876
0.0051   1.0000
 ------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :     0.326    0.366    0.557    0.415    0.289   0.046    0.143    0.222
2.71     0.380
    Composite NOX :     0.227    0.319    0.540    0.376    0.331   0.026    0.151    0.768
1.11     0.370
 ------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # #
* MINOR ARTERIAL UNDIVIDED 24.95 MPH
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # #
 M583 Warning:
        The user supplied arterial average speed of 25.0
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12

              Calendar Year:  2025
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  95.2 (F)
            Absolute Humidity:   75. grains/lb
             Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.5 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No
```

```
      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
            GVWR:             <6000     >6000     (All)
                   ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.378     0.409     0.620     0.463     0.374    0.056     0.172     0.294
2.99     0.433
    Composite NOX :      0.249     0.339     0.570     0.398     0.306    0.027     0.159     0.811
1.01     0.392
 ------------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # #
* COLLECTOR 23.78 MPH
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
          The user supplied arterial average speed of 23.8
          will be used for all hours of the day.  100% of VMT
          has been assigned to the arterial/collector roadway
          type for all hours of the day and all vehicle types.
  M 48 Warning:
           there are no sales for vehicle class HDGV8b
  M 48 Warning:
           there are no sales for vehicle class LDDT12
                Calendar Year:  2025
                      Month:  July
                   Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
             Absolute Humidity:   75. grains/lb
              Nominal Fuel RVP:   9.0 psi
                 Weathered RVP:   8.5 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No
```

```
      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
            GVWR:             <6000     >6000     (All)
                   ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.386     0.417     0.632     0.472     0.388     0.057     0.177     0.306
3.03     0.443
    Composite NOX :      0.253     0.343     0.577     0.402     0.303     0.028     0.161     0.824
1.00     0.396
 ------------------------------------------------------------------------------------------------------------------
---

* # # # # # # # # # # # # # # # # # # # # # # # # #
* LOCAL 25.33 MPH
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading Hourly Roadway VMT distribution from the following external
* data file: C:\MOBILE6\RUN\FVMTLOCL.D

 Reading User Supplied ROADWAY VMT Factors
 M585 Warning:
         100% of VMT has been assigned to the local roadway
         type for all hours of the day for all vehicle types
         with an average speed of 12.9 mph.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12

               Calendar Year:  2025
                     Month:  July
                  Altitude:  Low
           Minimum Temperature:  67.2 (F)
           Maximum Temperature:  95.2 (F)
             Absolute Humidity:   75. grains/lb
              Nominal Fuel RVP:   9.0 psi
                 Weathered RVP:   8.5 psi
           Fuel Sulfur Content:   30. ppm
```

```
          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

     Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV       MC   All Veh
          GVWR:             <6000     >6000     (All)
               ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507            0.0365    0.0003    0.0022    0.0876
0.0051    1.0000
 ------------------------------------------------------------------------------------------------------------------
---
 Composite Emission Factors (g/mi):
    Composite VOC :      0.599     0.591     0.863     0.661     0.701     0.080     0.241     0.467
3.79     0.643
    Composite NOX :      0.253     0.327     0.539     0.381     0.274     0.035     0.202     1.021
0.89     0.400
 ------------------------------------------------------------------------------------------------------------------
---

MOBILE6 INPUT FILE :
*234567890123456789:
REPORT FILE       : C:\MOBILE6\RUN\DATA\coats00D.txt
POLLUTANTS        : NOX HC

RUN DATA

MIN/MAX TEMP      : 67.2 95.2
FUEL RVP          : 9.0
FUEL PROGRAM      : 1
NO REFUELING      :

SCENARIO REC      : Freeway 58.6 MPH
CALENDAR YEAR     : 2000
EVALUATION MONTH  : 7
AVERAGE SPEED     : 58.6 FREEWAY

SCENARIO REC      : Expressway 47.91 MPH
CALENDAR YEAR     : 2000
EVALUATION MONTH  : 7
AVERAGE SPEED     : 47.91 FREEWAY

SCENARIO REC      : Principal Art Divided 38.75 MPH
```

CALENDAR YEAR : 2000
EVALUATION MONTH : 7
AVERAGE SPEED : 38.75 ARTERIAL

SCENARIO REC : PRINCIPAL ART UNDIVIDED 38.57 MPH
CALENDAR YEAR : 2000
EVALUATION MONTH : 7
AVERAGE SPEED : 38.57 ARTERIAL

SCENARIO REC : MINOR ARTERIAL DIVIDED 36.18 MPH
CALENDAR YEAR : 2000
EVALUATION MONTH : 7
AVERAGE SPEED : 36.18 ARTERIAL

SCENARIO REC : MINOR ARTERIAL UNDIVIDED 36.32 MPH
CALENDAR YEAR : 2000
EVALUATION MONTH : 7
AVERAGE SPEED : 36.32 ARTERIAL

SCENARIO REC : COLLECTOR 27.07 MPH
CALENDAR YEAR : 2000
EVALUATION MONTH : 7
AVERAGE SPEED : 27.07 ARTERIAL

SCENARIO REC : LOCAL 35.44 MPH
CALENDAR YEAR : 2000
EVALUATION MONTH : 7
VMT BY FACILITY : C:\MOBILE6\RUN\fvmtlocl.d
AVERAGE SPEED : 35.44 LOCAL

END OF RUN